REMARKS

A final Office Action was mailed in this case on April 20, 2004, in which pending claims 1-9, 11-22 and 24-34 were rejected. In response thereto, the above amendments and remarks which follow are submitted together with a Request for Continued Examination.1/ Claims 1, 21 and 34 have been amended herein to recite that the method of treating an inflammation or lesion caused by a virus comprises contacting the inflammation or lesions with a composition consisting of a pharmaceutically acceptable carrier and a synergistic combination. Support for these amendments is found in the Specification at paragraphs [0052], [0055] and [0057]. Reexamination and reconsideration of the application, as amended, are requested.

A. Rejections under 35 U.S.C. § 103(a) addressed

1. Claims 1-6, 9, 11-22 and 24-34 are rejected under 35 U.S.C. § 103(a) as unpatentable over *Yu et al.* (U.S. Pat. No. 5,385,938) in view of *Poli et al.* (Food Chemistry), *Wenniger* (Internat'l Cosmetic Ingredient Dictionary), the Merck Index, and *Pamukoff*. This rejection is respectfully traversed.

Independent claim 1 as amended above recites to a method of treating an inflammation or lesion by contacting the inflammation or lesion with a virucidally effective amount of a composition consisting of

> a pharmaceutically acceptable carrier and a synergistic combination, said synergistic combination consisting of a C1, a C2, or a C3 alcohol or a C2, C3, or C4 diol having a concentration of 0.2 to 12.5% by volume in water, and a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6.

It is well known that the transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim. Accordingly, the transitional phrase "consisting essentially of" requires that the composition contains a pharmaceutically acceptable carrier and a synergistic composition as set forth in claim 1, but excludes other ingredients.

1/ While this RCE filing implies a withdrawal of the appeal filed August 11, 2004, (MPEP § 1215.01), the Applicant expressly reserves the right to further prosecute the claims rejected in the final Office Action prior to amendment herein.

Further, the phrase "consisting of" in claim 1 clearly indicates that the synergistic combination contains only:

- a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 12.5% by volume in water, and
- a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6.

Thus, any element or ingredient other than a pharmaceutically acceptable carrier, a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 12.5% by volume in water and a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6 is excluded from the claim 1 composition. Independent claim 21 has been amended similarly to claim 1 (with an upper range of 13.% by volume in water) and thus the above remarks apply equally to the amendments made to claim 21.

In contrast, *Yu* teaches a composition comprising two agents: an alpha hydroxyacid or alpha ketoacid and an amphoteric or pseudoamphoteric compound. The amphoteric or pseudoamphoteric compound is intentionally added to raise the pH of the composition in order to avoid skin irritation (see col. 4, lines 2-12). Specifically, *Yu* states that a 1 molar aqueous solution of glycolic acid has a pH of 1.9, but the pH of the composition changes to 3.0 or 3.2 when an amphoteric compound such as arginine or creatinine, respectively, is combined with the glycolic acid solution. Thus, in this example *Yu*'s active composition requires both an alpha hydroxyacid and an amphoteric compound. Therefore *Yu*'s composition contains an element, i.e., an amphoteric compound, which is specifically excluded from the elements allowed in the composition used in the method of claims 1-6, 9, 11-22 and 24-34.

Yu also describes a formulation containing specific alpha hydroxy acids which are therapeutically effective for certain skin disorders without utilizing an amphoteric system (col. 11, line 55-col. 12, line 2), and provides glycolic acid as an example of an effective alpha hydroxy acid. However, as discussed above, the pH of a glycolic acid solution that does not include an amphoteric compound is **1.9**—clearly outside of the pH range of 2.45 to 4.6 as required in claim 1. Thus, this alternate composition of *Yu* is also outside of the scope of claims 1-6, 9, 11-22 and 24-34 as presently pending.

Since *Yu* does not teach or suggest every element of the composition used in the method of claims 1-6, 9, 11-22 and 24-34, these claims are patentable over *Yu* alone or combined with the other cited references.

Next, the Examiner asserts that while *Yu* does not expressly teach that the glycolic acid containing topical composition is useful in inactivating lesions caused by viruses in the *Herpesvirdae* family, *Poli* discloses that glycolic acid is virucidal against herpesvirus. Applicants respectfully disagree and assert that *Yu* with *Poli* does not render claims 1-6, 9, 11-22 and 24-34 obvious.

Poli describes a study to determine the *in vitro* antiviral activity of certain organic acids. *Poli* found that certain organic acids have antiviral activity which is proportional to the polarity of the molecule (page 255, last paragraph). However, it is asserted that *Poli* does not teach or suggest that the pH of the acid solution is critical for virucidal activity. Further, *Poli* does not teach or suggest a method of treating lesions using a composition consisting of a pharmaceutical carrier and a synergistic combination, wherein the synergistic composition consists of a low concentration of a lower chain alcohol and an acid at a specific pH. Thus, even if there were a motivation to combine the acids disclosed by *Poli* with the *Yu* composition, such a combination would not teach the methods of the present invention.

Next, the Examiner asserts that while *Yu* does not expressly teach that 1,3-butanediol is useful as a pharmaceutical vehicle, *Wenniger* teaches that 1,3-butanediol is useful as a solvent in numerous cosmetic products. However, *Wenniger* adds nothing to *Yu* that would render claims 1-6, 9, 11-22 and 25-34 obvious. Even if there were a motivation to combine the references, the combination would not provide a method of treating lesions by contacting the lesion with a composition consisting of a pharmaceutical carrier and a synergistic combination, said synergistic combination consisting of a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 12.5 or 3.0% by volume in water, and a sufficient amount of an acid to adjust the pH of the composition to between 2.45 and 4.6.

Next, the Examiner asserts that while *Yu* does not expressly teach the composition having a specific pH of 2.45 and a glycolic acid concentration of

0.6%, the Merck Index teaches that the pH of a 0.5% glycolic acid is 2.50. However, it is asserted that the inclusion of the Merck Index adds nothing to the above combination of references that would render claims 1-6, 9, 11-22 and 24-34 obvious. As stated, the novel feature of the present invention is the synergistic combination **consisting of** a C1-C3 alcohol or a C2-C4 diol having a concentration of 0.2 to 13.0% by volume in water, and a sufficient amount of an acid to adjust the pH of the composition to between 2.45 and 4.6. The inventors discovered that this novel synergistic combination can be used to prevent the formation of lesions caused by a virus when applied topically to the potential site of a lesion. The reliance on the Merck Index is weak at best and does not take into consideration the invention as a whole.

Finally, the Examiner asserts that *Pamukoff* teaches a composition containing 1-10% ethanol for treating viral infections broadly and in particular infections that are caused by *Herpes* virus. However, it must be noted that *Pamukoff* does not provide evidence that ethanol alone provided a virucidal composition, but rather only demonstrates that ethanol was effective only when in combination with an alkali metal halide salt and glycerine. The "consisting of" language of the present claims specifically excludes a metal salt and glycerine. Further, there is no suggestion in Pamukoff that the addition of an acid to his composition would provide a virucidal composition. Consequently, persons skilled in the art would not have been motivated or guided by *Pamukoff* to arrive at the methods of the claimed invention. Contrary to the Examiner's assertion, the art relied on provides no motivation to combine the teachings of *Pamukoff* with the teachings of the other references to arrive at the compositions of the present invention. Thus, there is no reason why one would add an acid to the *Pamukoff* composition. Further, since *Pamukoff* states that his composition is already effective, there is no suggestion or motivation to modify the compositions of *Pamukoff* by adding an acid as suggested by the Examiner. "Without some incentive or suggestion in the prior references to use materials disclosed in the referenced in the manner claimed by a patent applicant, a rejection of applicant's claimed invention is improper." *Ex parte Shepard and Gushe*, 188 USPQ 536 (PTO Bd. App. 1974); *In re* Samour, 197 USPQ 1 (CCPA 1978).

In summary, even if there were motivation to combine the above references, the combination still would not provide the novel methods of claims 1-6, 9, 11-22 and 24-33 as amended herein. Withdrawal of this rejection is respectfully requested.

2. Claims 1 and 7-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bhatia et al.* (Indian J. Animal Sci.) and *Pamukoff*. The Examiner asserts that *Bhatia* teaches that 0.4N hydrochloric acid is effective in inactivating sheep pox virus, and *Pamukoff* teaches a 1-10% ethyl alcohol containing composition for treating viral infections broadly and in particular the infections that are caused by *Herpes* virus. While the Examiner acknowledges that the references do not expressly teach the claimed lesion treating method employing both ethanol and HCl and do not expressly teach the claimed pH of 2.45, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the pH of the composition to 2.45. The Examiner's reasoning is that *Bhatia* separately teaches that acid inactivates viruses and *Pamukoff* separately teaches that alcohol is useful in activating viruses, and therefore it "flows logically to combine the two compositions which are known to be useful to treat lesions individually into a single composition useful for the very same purpose is prima facie obvious". This rejection is respectfully traversed.

First, presuming *arguendo* that the references show that the elements of the pending claims, the Examiner has presented no line of reasoning as to why the artisan viewing only the collective teachings of the cited references would have found it obvious to selectively pick and choose various elements and/or concepts of the references relied on to arrive at the claimed invention. Rather, the Examiner has done little more than cite references to show that one or more elements, when each is in a vacuum, is known. The claimed invention, however, is clearly directed to method of using a unique, synergistic combination of elements. That is to say, the inventors do not claim that they have invented one or more new elements but have presented claims to a method of using a novel combination of elements. To support the conclusion that the claimed combination is directed to obvious subject matter, either the

references must expressly or impliedly suggest the claimed combination, or the Examiner must present a convincing line of reasoning as to why persons skilled in the art would have found the claimed invention to have been obvious in light of the teachings of the references. It is noted that simplicity and hindsight are not proper criteria for resolving the issue of obviousness. Note *In re Horn*, 203 USPQ 969, 971 (CCPA 1979).

It is further asserted that *Bhatia* and *Pamukoff* do not teach the elements of the claimed invention. Rather, the purpose of *Bhatia* is to determine if hydrochloric acid will inactivate a goat-pox virus *in vitro* **prior** to contacting the acid with the goats' skin. *Bhatia* discloses a method of combining goat-pox virus with hydrochloric acid and incubating this suspension for a period of time (page 518, 2nd column, last paragraph). To determine if the virus is still active after incubation with acid, *Bhatia* injects the suspension under the goats' skin and watches for signs of pain at the injection site. Thus, the *Bhatia* composition is actually a mixture of the goat-pox virus and a concentrated acid. Further, *Bhatia* only demonstrates that acid kills a virus *in vitro*. *Bhatia* does not teach or suggest applying acid to the skin to prevent an inflammation or lesion caused by a virus of the *Herpesviridae* or *Poxviridae* family. More importantly, *Bhatia* does not teach or suggest a method of treating a lesion comprising applying to a lesion a virucidally effective amount of a composition consisting of a pharmaceutical carrier and a synergistic combination, said synergistic combination consisting o a C1, a C2, or a C3 alcohol or a C2, C3, or C4 diol having a concentration of 0.2 to 13.0% by volume in water, and a sufficient amount of an acid to adjust the pH of the synergistic combination to between 2.45 and 4.6.

Further, it is asserted that the combination of *Bhatia* and *Pamukoff* would not render the method of claims 1 and 7-8 obvious. As stated above, *Pamukoff* did not provide evidence that ethanol alone provided a virucidal composition, but rather only demonstrated that ethanol was effective only when in combination with an alkali metal halide salt and glycerine. The "consisting of" language of the present claims specifically excludes a metal salt and glycerine. Further, there is no suggestion in *Pamukoff* that the addition of an acid to his composition would provide a virucidal composition.

Consequently, persons skilled in the art would not have been motivated or guided by *Pamukoff* to arrive at the methods of the claimed invention. Accordingly, even if there were a motivation to combine the teachings of Bhatia with the teachings of *Pamukoff*, the combination would not render the methods of this invention obvious. Withdrawal of this rejection is respectfully requested.

B. Conclusions

All of the remarks in the final Office Action have been addressed, claims 1-6, 9, 11-22 and 24-34 are believed to be in condition for allowance, and such action is respectfully requested. This Amendment and Remarks is being submitted along with a Petition for a One Month Time Extension, a Request for Continued Examination, and the associated fees. Should any additional fees be due, the Examiner is authorized to charge any fee deficiency associated with this response to Deposit Account No. 50-1123. The Examiner is asked to kindly contact the undersigned by telephone should any outstanding issues remain.

C. Petition for 1-Month Extension of Time

While the Final Office Action was mailed April 20, 2004 in this case, a Notice of Appeal was filed August 11, 2004 allowing two months to October 11, 2004 to file an Appeal Brief or take other action. The undersigned hereby petitions for a 1-month extension from October 11 to November 11, 2004.

Please charge Deposit Account No. 50-1123, $450.00 which includes the small-entity RCE fee and 1-Month Extension Fee. Please charge Deposit Account No. 50-1123 any fee deficiency associated herewith.

Respectfully submitted,

November 9, 2004

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